

April 3, 2023

Docket No.: 52-026

ND-23-0230
10 CFR 52.99(c)(2)

U.S. Nuclear Regulatory Commission
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Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 4
Supplement for AP1000 ITAAC 2.5.02.07a [Index Number 534] Completion

Ladies and Gentlemen:

The purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) in accordance with 10 CFR 52.99(c)(2) of supplemental information regarding the completion status of Vogtle Electric Generating Plant (VEGP) Unit 4 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.5.02.07a [Index Number 534]. This ITAAC verified that a report existed and concluded that isolation devices prevent credible faults from propagating into the Protection and Safety Monitoring System (PMS) from the Plant Control System (PLS). This notification is being provided in accordance with NEI 08-01, "Industry Guideline for the ITAAC Closure Process under 10 CFR Part 52," which was endorsed by the NRC in Regulatory Guide 1.215.

Reason for Supplement

Additional actions were required to maintain the completed status of ITAAC 2.5.02.07a following the submittal of Unit 4 ITAAC Closure Notification (ICN) ND-17-0572 (ADAMS Accession Number ML17093A535), originally submitted March 31, 2017, due to the discovery of a postulated credible scenario involving a breakdown in an analog Isolation Barrier (ISB) assembly used to protect PMS Class 1E power from an electrical fault originating from non-Class 1E power. The non-Class 1E credible fault location was inside the ISB itself. The condition was corrected by installing an in-line fuse modification to the negative leg of the power feed to the ISB. The ICN required that type testing be performed per IEEE 384-1981 on the ISB components. Addition of a fuse to the negative leg of the power feed therefore required additional IEEE 384-1981 testing.

This letter contains no new NRC regulatory commitments. Southern Nuclear Operating Company (SNC) requests NRC staff confirmation of this determination and publication of the required notice in the Federal Register per 10 CFR 52.99.

If there are any questions, please contact Kelli Roberts at 706-848-6991.

Respectfully submitted,



Jamie M. Coleman
Regulatory Affairs Director Vogtle 3 & 4

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JMC/RLB/sfr

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cc: Regional Administrator, Region II
Director, Office of Nuclear Reactor Regulation (NRR)
Director, Vogtle Project Office NRR
Senior Resident Inspector – Vogtle 3 & 4

**Southern Nuclear Operating Company
ND-23-0230
Enclosure**

**Vogtle Electric Generating Plant (VEGP) Unit 4
Supplement for AP1000 ITAAC 2.5.02.07a [Index Number 534] Completion**

ITAAC Statement

Design Commitment

7.a) The PMS provides process signals to the PLS through isolation devices.

Inspections/Tests/Analyses

Type tests, analyses, or a combination of type tests and analyses of the isolation devices will be performed.

Acceptance Criteria

A report exists and concludes that the isolation devices prevent credible faults from propagating into the PMS.

Supplemental ITAAC Determination Basis

Following the closure of Unit 4 ITAAC 2.5.02.07a (Reference 1), a postulated credible scenario involving a breakdown in a Protection and Safety Monitoring System (PMS) to Plant Control System (PLS) interface analog Isolation Barrier (ISB) assembly used to protect PMS Class 1E power from an electrical fault originating from non-Class 1E power was identified. The non-Class 1E credible fault location was inside the analog ISB itself. The PMS cabinets affected by this condition are identified in Attachment A and the condition only involved the analog ISBs in these cabinets. The condition was corrected by installing an in-line fuse modification to the negative leg of the power feed to each of the affected ISBs per Engineering & Design Coordination Report APP-GW-GEF-2540 (Reference 2).

Reference 1 required that type testing be performed, per IEEE 384-1981 (Reference 3), on the ISB components that prevent credible faults from propagating into the PMS. As a result, the ISB modification required additional IEEE 384-1981 common mode fault testing, which in turn required a revision to APP-PMS-VBR-015 (Reference 4) to document the ISB IEEE 384-1981 common mode test results. The remainder of the testing and qualification discussion contained in APP-PMS-VBR-015 was unaffected by the addition of the analog ISB IEEE 384-1981 common mode test results.

The analog ISB common mode test results are documented in APP-PMS-VPR-021 (Reference 5). The test results demonstrated that the Class 1E to non-Class 1E isolation barrier components provided a robust defense against maximum credible faults and prevented the conduction of fault current from the non-Class 1E side of the barrier to the Class 1E side of the barrier. Reference 5 concluded that the safety system (PMS) is not degraded below an acceptable level as a result of maximum credible fault voltages or current transients as required by IEEE 384-1981.

The analog ISB modification was installed in the PMS cabinets identified in Attachment A under Initial Test Program Work Package SV4-PMS-TOW-1224340 (Reference 6). Since the modification only affected the power wiring to the ISBs, post-installation regression testing was accomplished by restoring power to the ISBs and checking the ISB power module LEDs to ensure they were indicating power was present.

The testing documented in Reference 5 confirmed that the analog ISB modification to the isolation devices continues to prevent credible faults from propagating into the PMS. Reference

6 regression testing confirms that the analog ISB modification installation was performed correctly for the PMS cabinets identified in Attachment A. These actions ensure the ITAAC 2.5.02.07a Acceptance Criteria remains satisfied and the completed status of ITAAC 2.5.02.07a is maintained.

References 2 through 7 are available for NRC inspection as part of Unit 4 ITAAC Completion Package Supplement (Reference 8).

Associated ITAAC Findings

In accordance with plant procedures for ITAAC completion, Southern Nuclear Operating Company (SNC) performed a review of all findings pertaining to the subject ITAAC and associated corrective actions. This review found there was one Notice of Nonconformance (NON) associated with this ITAAC.

- NON 99900404/2015-204-01 (closed)

The corrective actions for this NON have been completed and the NON closed. The Vogtle Unit 4 ITAAC 2.5.02.07a Completion Package (Reference 7) has been supplemented (Reference 8) to include this additional information and is available for NRC inspection.

ITAAC Completion Maintained Statement

Based on the above information, SNC hereby notifies the NRC that the completed status of ITAAC 2.5.02.07a for VEGP Unit 4 has been maintained, and that the prescribed acceptance criteria continue to be met.

Systems, structures, and components verified as part of this ITAAC are being maintained in their as-designed, ITAAC compliant condition in accordance with approved plant programs and procedures.

References (available for NRC inspection)

1. Unit 4 ITAAC Closure Notification ND-17-0572 (ADAMS Accession Number ML17093A535), March 31, 2017
2. Engineering & Design Coordination Report APP-GW-GEF-2540, Isolation Barrier Modification, Rev 0
3. IEEE Standard 384-1981, IEEE Standard Criteria for Independence of Class 1E Equipment and Circuits
4. APP-PMS-VBR-015, AP1000 Protection and Safety Monitoring System Isolation Summary Report for Use in the AP1000 Plant, Rev. 3
5. APP-PMS-VPR-021, AP1000 PMS Isolation Barrier Maximum Credible Fault Test Report, Rev. 0
6. Initial Test Program Work Package SV4-PMS-T0W-1224340, Implement FCN SV4-GW-GCW-655: SV4 PMS BCC and MTC ISB Fuse Retrofit FCN, Rev 0
7. 2.5.02.07a-U4-CP-Rev0, ITAAC Completion Package
8. 2.5.02.07a-U4-CP-Rev1, ITAAC Completion Package Supplement

Attachment A

PMS Cabinets Requiring Isolation Barrier Assembly Modification	
Cabinet Name	Tag No.
Bistable/Coincidence Logic Cabinet 01 - DIV. A	SV4-PMS-JD-BCCA01
Bistable/Coincidence Logic Cabinet 01 - DIV. B	SV4-PMS-JD-BCCB01
Bistable/Coincidence Logic Cabinet 01 - DIV. C	SV4-PMS-JD-BCCC01
Bistable/Coincidence Logic Cabinet 01 - DIV. D	SV4-PMS-JD-BCCD01
PMS Maintenance and Test Cabinet 01 - Div. A	SV4-PMS-JD-MTCA01
PMS Maintenance and Test Cabinet 01 - Div. B	SV4-PMS-JD-MTCB01
PMS Maintenance and Test Cabinet 01 - Div. C	SV4-PMS-JD-MTCC01
PMS Maintenance and Test Cabinet 01 - Div. D	SV4-PMS-JD-MTCD01